

MIL-DTL-83503/20D  
w/AMENDMENT 1  
4 August 2010  
SUPERSEDING  
MIL-DTL-83503/20D  
21 July 2004

CONNECTORS, ELECTRICAL, FLAT CABLE, NONENVIRONMENTAL  
HEADER, RIGHT ANGLE (.100 SPACING) WITH POLARIZING FEATURE  
SOLDERLESS WRAPPOST OR PWB TERMINATION

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-DTL-83503.



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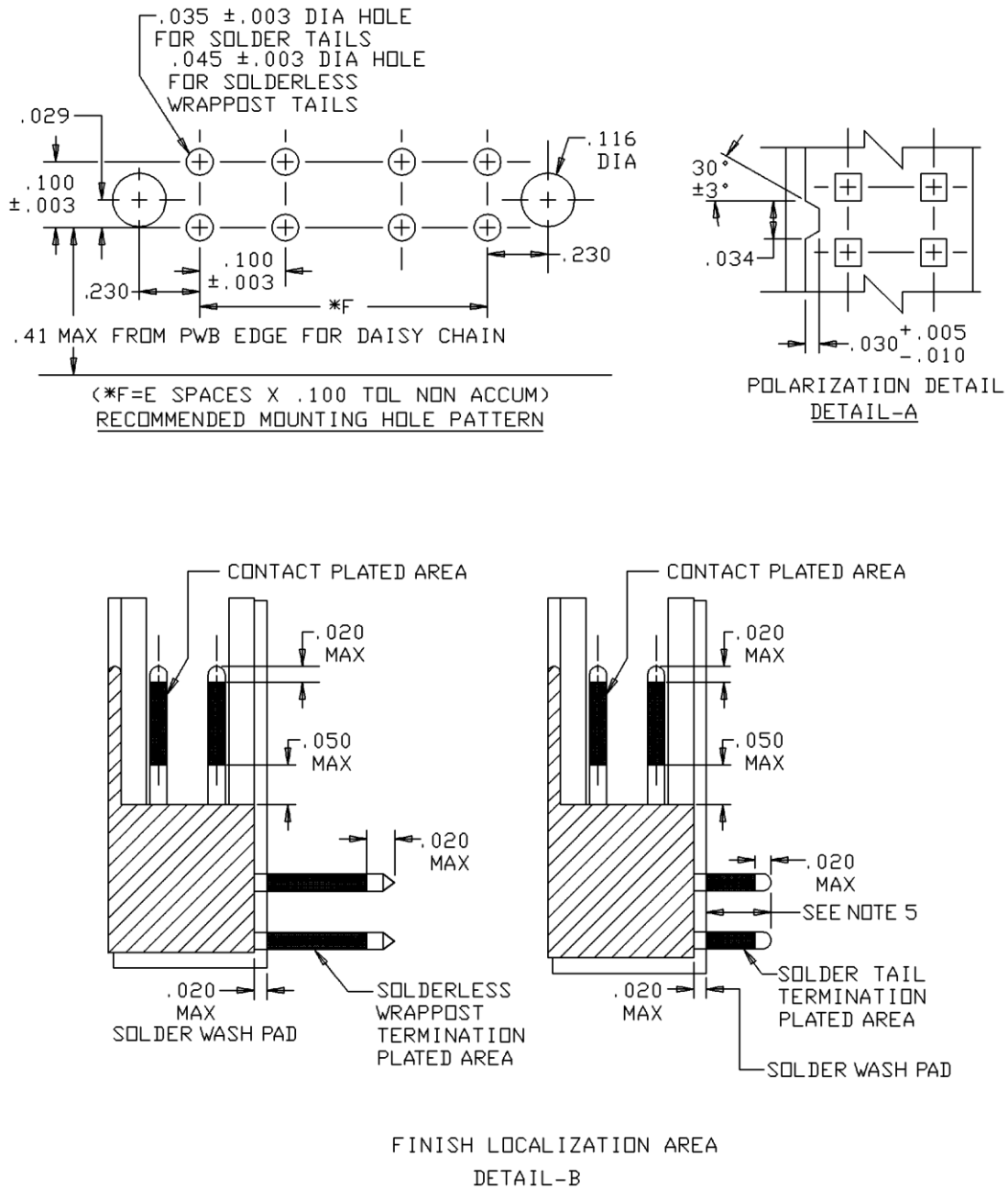


FIGURE 1. Dimensions and configuration - Continued.

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Inches	mm	Inches	mm	Inches	mm	Inches	mm
.003	0.08	.032	0.81	.105	2.67	.240	6.10
.005	0.13	.034	0.86	.116	2.95	.250	6.35
.006	0.15	.035	0.89	.125	3.18	.290	7.37
.007	0.18	.042	1.07	.142	3.61	.31	7.9
.01	0.3	.045	1.14	.15	3.8	.32	8.1
.012	0.30	.05	1.3	.152	3.86	.352	8.94
.015	0.38	.060	1.52	.16	4.1	.41	10.41
.020	0.51	.062	1.57	.178	4.52	.500	12.70
.025	0.64	.08	2.0	.195	4.95	.573	14.55
.029	0.74	.089	2.26	.20	5.1	.610	15.49
.030	0.76	.100	2.54	.230	5.84	1.3	33.0

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. Unless otherwise specified tolerances are  $\pm .005$  inch (0.13 mm) for three place decimals and  $\pm .01$  inch (0.3 mm) for two place decimals.
4. For 10 and 14 position connectors the polarizing feature on this end is non-existent.
5. Pin length for printed wiring board (PWB) is as follows:

PWB thickness inches (mm)	Pin length min inches (mm)	Pin length max inches (mm)
.062 (1.57)	.089 (2.26)	.116 (2.95)
.125 (3.18)	.152 (3.86)	.178 (4.52)

FIGURE 1. Dimensions and configuration - Continued.

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TABLE I. Dash numbers and characteristics.

Dash number	Number of pins	Dimensions						Termination, right angle contact type
		A inches (mm)	B inches (mm)	C inches (mm)	D <sup>1/</sup> inches (mm)	E spaces	F inches (mm)	
-01	10	1.26	1.10	.86	.690	4	.400	.062 PWB
-02	10	(32.0)	(27.9)	(21.84)	(17.53)		(10.16)	.125 PWB
-03	10							Wrappost
-04	14	1.46	1.30	1.06	.890	6	.600	.062 PWB
-05	14	(37.1)	(33.0)	(26.92)	(22.61)		(15.24)	.125 PWB
-06	14							Wrappost
-07	16	1.56	1.40	1.16	.990	7	.700	.062 PWB
-08	16	(39.6)	(35.6)	(29.46)	(25.15)		(17.78)	.125 PWB
-09	16							Wrappost
-10	20	1.76	1.60	1.36	1.190	9	.900	.062 PWB
-11	20	(44.7)	(40.6)	(34.54)	(30.23)		(22.86)	.125 PWB
-12	20							Wrappost
-13	26	2.06	1.90	1.66	1.490	12	1.200	.062 PWB
-14	26	(52.3)	(48.3)	(42.16)	(37.85)		(30.48)	.125 PWB
-15	26							Wrappost
-16	34	2.46	2.30	2.06	1.890	16	1.600	.062 PWB
-17	34	(62.5)	(58.4)	(52.32)	(48.01)		(40.64)	.125 PWB
-18	34							Wrappost
-19	40	2.76	2.60	2.36	2.190	19	1.900	.062 PWB
-20	40	(70.1)	(66.0)	(59.94)	(55.63)		(48.26)	.125 PWB
-21	40							Wrappost
-22	50	3.26	3.10	2.86	2.690	24	2.400	.062 PWB
-23	50	(82.8)	(78.7)	(72.64)	(68.33)		(60.96)	.125 PWB
-24	50							Wrappost
-25	60	3.76	3.60	3.36	3.190	29	2.900	.062 PWB
-26	60	(95.5)	(91.4)	(85.34)	(81.03)		(73.66)	.125 PWB
-27	60							Wrappost
-28	64	3.96	3.80	3.56	3.390	31	3.100	.062 PWB
-29	64	(100.6)	(96.5)	(90.42)	(86.11)		(78.74)	.125 PWB
-30	64							Wrappost

<sup>1/</sup> Tolerance for "D" dimension is +.030 -.000 inches (+0.76 -0.00 mm).

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REQUIREMENTS:

Design and construction:

Dimensions and configurations: See figure 1 and table I.

Mating connector: See MIL-DTL-83503/7.

Temperature range: -55°C to +120°C.

Voltage rating: 300 V rms.

Current rating: 1 ampere.

Materials:

Housing: The housing shall be glass filled polyester in accordance with MIL-M-24519, type GPT-15F, GPT-20F, or GPT-30F.

Accessories: Parts may be constructed of polyester in accordance with MIL-M-24519, or other materials specified in MIL-DTL-83503.

Polarization key: Shall be permanently attached to header (added feature key shall be bonded to header).

Contacts: The contacts shall be phosphor bronze or brass. Phosphor bronze shall be in accordance with ASTM-B139/B139M. Brass shall be in accordance with copper alloy CDA 260, spring temper; or copper alloy UNS No. C72500 spring temper, in accordance with ASTM-B122/B122M.

Contact plating:

Contact area: Gold in accordance with MIL-DTL-83503.

Solder tail termination area: Gold, or tin-lead in accordance with MIL-DTL-83503.

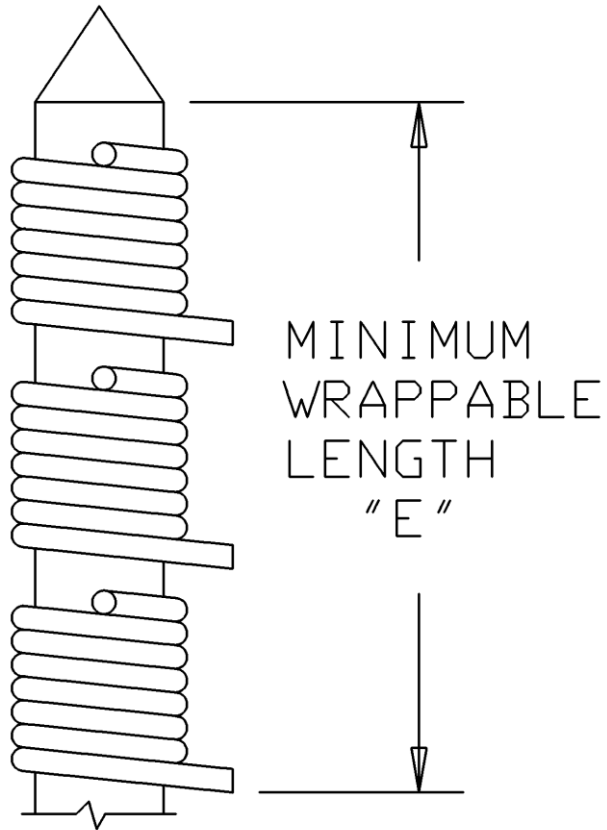
Solderless wrappost contacts:

Wrappost geometry: .025 inch (0.64 mm) square wrappost in accordance with figures 2 and 3.

Parallelism: See figure 3 and table.

Tip configuration: The tip configuration of the wrappost shall terminate in a radius or bevel to facilitate insertion of the wrapping tool. See figure 3.

Solderless wrappost contact wire accommodation: 28 or 26 AWG solid.



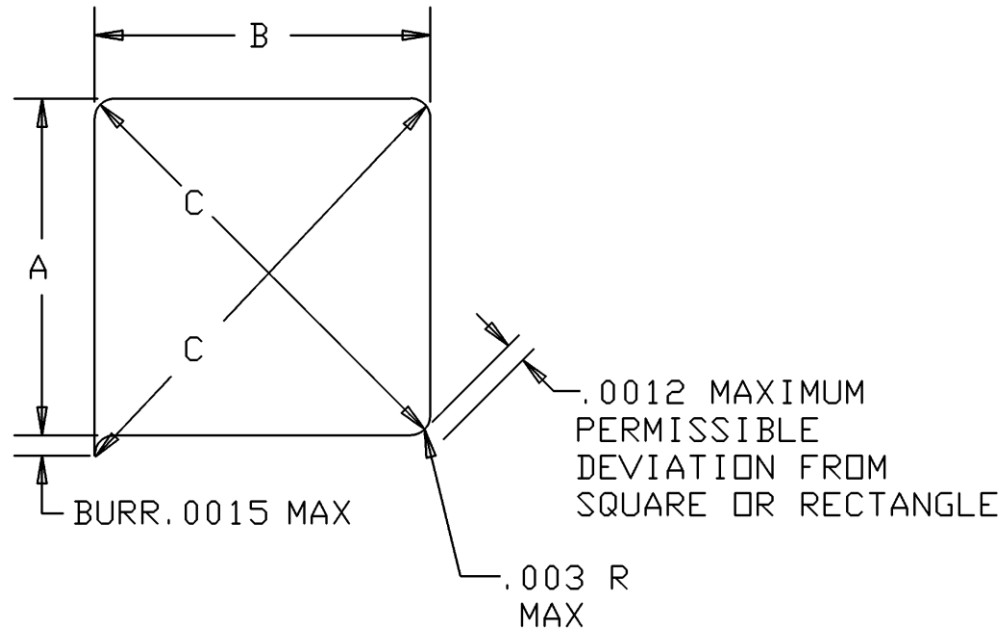
Number of wrapped corrections	"E" Length	
	Wire gage 28 inches (mm)	Wire gage 26 inches (mm)
1	.219 (5.56)	.226 (5.74)
2	.388 (9.86)	.402 (10.21)
3	.557 (14.15)	.578 (14.68)

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.

FIGURE 2. Wrappable length (typical connection).

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inches	mm
.0012	0.030
.0015	0.038
.003	0.076

A inches (mm)	B inches (mm)	C inches (mm)	Parallelism inches (mm)	Straightness inches
.025 (0.64) nominal .022 (0.56) min	.025 (0.64) nominal .022 (0.56) min	.0355 (0.902) max .0325 (0.826) min	.002 (0.05)	.005

- NOTES:
1. Dimensions are in inches.
  2. Metric equivalents are given for information only.
  3. If the tip of the wrappost terminates in a bevel, the apex of the bevel shall be flat, with no side of the flat exceeding .015 inch (0.38 mm).

FIGURE 3. Wrappost geometry.

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Withstanding voltage:

Sea level: 500 V rms, minimum.

Altitude: 200 V rms, minimum.

Contact resistance: 50 milliohms maximum.

Cable retention: Not applicable.

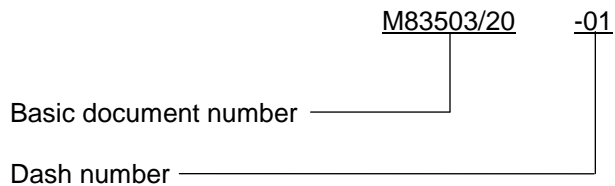
Connector-cable flexing: Not applicable.

Latch retention: The latch shall retain the mating connector when the cable retention force is applied to the mating connector cable. The latch shall also function as an ejector to eject mating connector.

Marking:

PIN: The PIN shall consist of the letter "M", followed by the basic specification number, "/", the specification sheet number, "-" and the dash number in table I.

Example:



Contact identification: Molded triangle "Δ" or notch to show number 1 contact, or raised numbers to show position number "1".



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Amendment notations. The margins of this specification are marked with vertical lines to indicate where modifications from this amendment were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations.

Referenced documents. In addition to MIL-DTL-83503, this document references the following:

MIL-M-24519  
MIL-DTL-83503/7  
ASTM-B122/B122M  
ASTM-B139/B139M  
CDA 260

CONCLUDING MATERIAL

Custodians:  
Air Force - 85  
DLA - CC

Preparing activity:  
DLA - CC

(Project 5935-2010-135)

Review activity:  
Air Force - 99

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